ABSTRACT OF THE DISCLOSURE

In one embodiment, an integrated differential isolation loss detector is disclosed that generates a first temperature that is a function of a high side current and a second temperature that is a function of a low side current. A temperature sensor senses the difference between the first and second temperatures and provides an output signal that is indicative of the magnitude and the polarity of the sensed difference. A controller receives the output signal and if the difference is greater than a predetermined magnitude the high side current, the low side current, or both can be disconnected from the load.

In another embodiment, an integrated differential isolation loss detector is disclosed that includes a first temperature difference generator that generates first and second temperatures where the difference between the first and second temperatures is a function of the magnitude of the high side current. The integrated differential isolation loss detector further includes a second temperature difference generator coupled to the low side current that generates third and fourth temperatures where the difference between the third and fourth temperatures is a function of the magnitude of the low side current. A second temperature sensor senses the difference between the third and fourth temperatures and provides a second output signal that is indicative of the magnitude and the polarity of the sensed difference. A controller receives the first and second output signals and if the difference between the two output signals is greater than a predetermined magnitude the high side current, the low side current, or both can be disconnected from the load.

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